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U. S. NAVAL MEDICAL RESEARCH
INSTITUTE
NATIONAL NAVAL MEDICAL CENTER

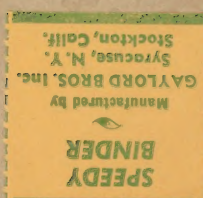
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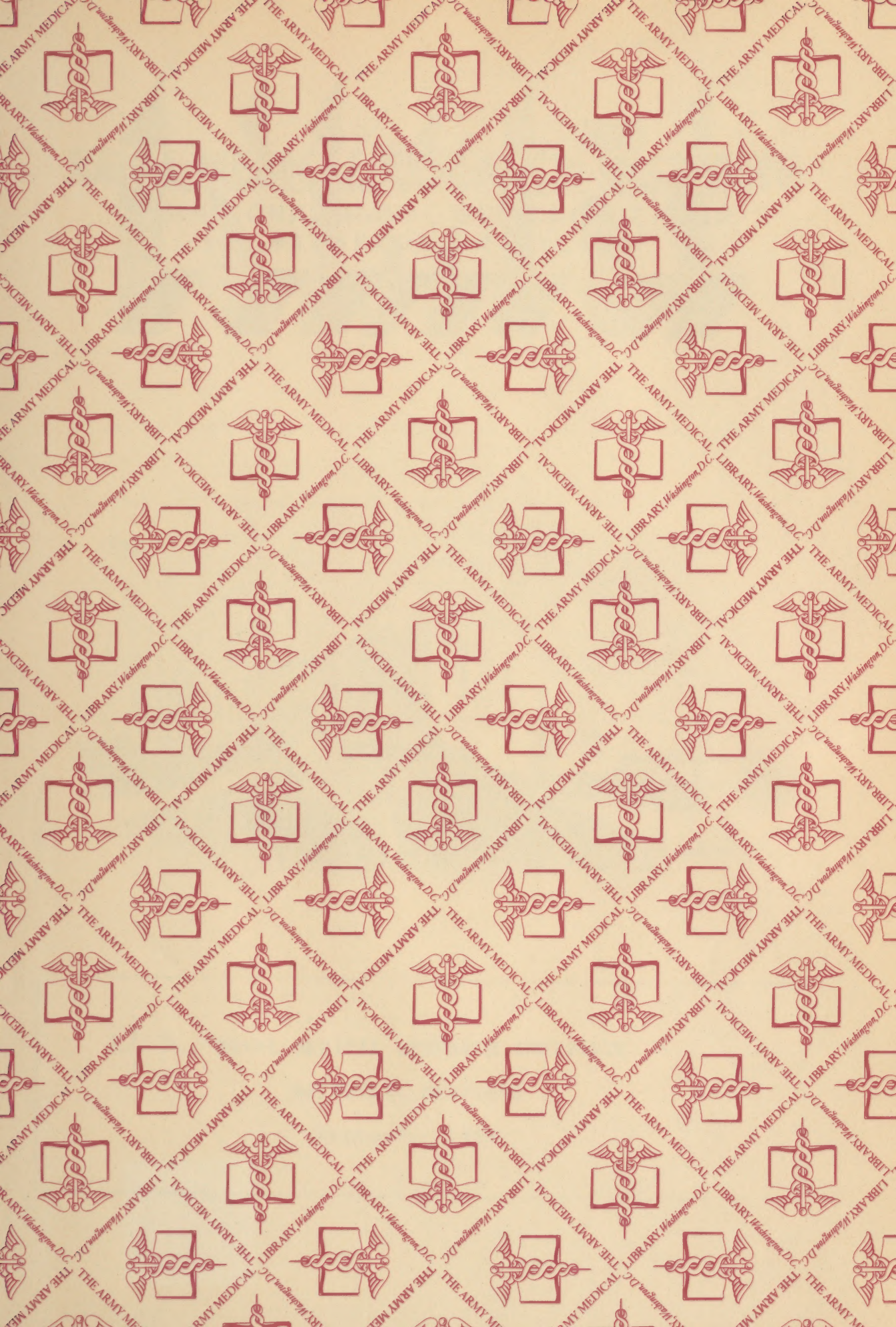
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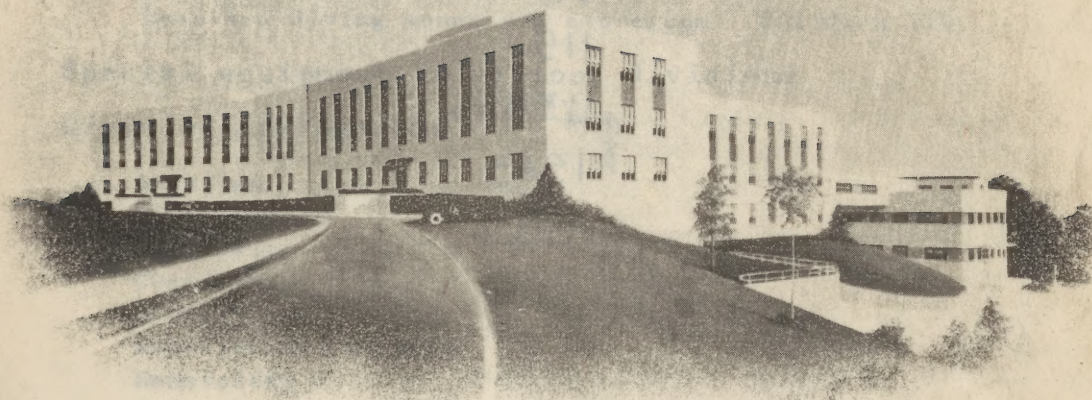


Not a Serial

NAVAL MEDICAL RESEARCH INSTITUTE

NATIONAL NAVAL MEDICAL CENTER
BETHESDA, MARYLAND

National Naval Medical Center air view
Naval Medical Research Institute air view
Naval Medical Research Institute ground plan (sketch)
Naval Physical plant (list)
Plant drawings (sketches)



Microbiology
Parasitology
Pathology
Pharmacology and Therapeutics
Physiology
Psychiatry and Neurology

Radiation Technology
Submarine and Diving Medicine

U.S. NAVAL MEDICAL RESEARCH INSTITUTE

Machining Shop
Glass Blowing
BETHESDA, MARYLAND

September 1949

NAVAL MEDICAL RESEARCH INSTITUTE

NATIONAL NAVAL MEDICAL CENTER
BETHESDA, MARYLAND

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ARMED FORCES MEDICAL LIBRARY
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U.S. NAVAL MEDICAL RESEARCH INSTITUTE

BETHESDA, MARYLAND

September 1949

TABLE OF CONTENTS

Policy and functions

General description

Organization chart

Personnel

National Naval Medical Center air view

Naval Medical Research Institute air view

Naval Medical Research Institute ground plan (sketch)

NMRI Physical plant (list)

Plant photographs (buildings)

Naval Medical Research Institute - Bldg. 17 foreground

Aviation Research and Vibration Labs. - Building 139

Animal Laboratories - Building 119

NMRI Annex - Building 18

Deep sea diving annex and storeroom - Building 119

Special equipment in various divisions

Division photographs

Aviation

Bacteriology

Biophysics

Chemistry

Dental

Experimental Surgery

Hematology

Parasitology

Pathology

Pharmacology and Toxicology

Physiology

Psychology and Statistics

Radiation Technology

Submarine and Diving Medicine

Virology

Machine Shops

Glass Blowing

GENERAL POLICY AND FUNCTIONS OF THE NAVAL MEDICAL RESEARCH INSTITUTE

The function of the Naval Medical Research Institute is to maintain within the Navy an active nucleus of highly competent scientists immediately available to meet the urgent needs of a national emergency.

The scientists who contribute most effectively to a war effort are those whose primary interest is basic research aimed only at the acquisition of new knowledge and understanding. In order to maintain a staff of such scientists, the peacetime policy of the Institute provides for its investigators freedom in the initiation, and support for the prosecution of basic research.

The staff of the Institute is available to field laboratories in other branches of the Service for consultation and advice. The Institute will give advanced training to qualified personnel and occasional assistance in field and preliminary experiments.

GENERAL DESCRIPTION OF
NAVAL MEDICAL RESEARCH INSTITUTE
BETHESDA, MARYLAND

The Naval Medical Research Institute was established in October 1942 and was developed during World War II to its present size and scope of research.

It is the largest activity for medical research in the Navy. On its 87,750 square feet of floor space there are more than 100 laboratories. They are designed for research in Aviation Medicine, Bacteriology, Biophysics, Chemistry, Dentistry, Experimental Surgery, Hematology, Parasitology, Pathology, Pharmacology and Toxicology, Physiology, Psychology, Radiation Technology, (Radiology, Radioisotopes), Submarine and Diving Medicine, and Virology. Additional major features of the physical plant include pressure tanks for research in aviation medicine, and submarine and diving medicine, and psychrometric rooms for physiological and environmental studies.

In support of these laboratories there is a large Animal House with modern provisions for breeding laboratory animals and with air conditioned laboratory suites for studies requiring control of temperatures and humidity. Technical shops, glass apparatus and instrumentation laboratories with skilled machinists and mechanics are available for the design and construction of laboratory apparatus. Practically every scientific instrument needed for biological research is available in the various laboratories. Many special installations and types of apparatus are included, such as the electron microscope, apparatus for X-ray diffraction and electrophoresis, and ultracentrifuge, and ultraviolet, infrared and mass spectrographs.

The staff consists of some 70 scientists in various fields of the biological sciences about a third of whom are civilian and the remainder are in uniform and approximately twice that number of technical assistants from the Hospital Corps and Civil Service.

The scope of the research may be indicated to some extent by the enumeration of some of the research projects which have been completed or on which the staff is currently engaged: Water and food for shipwrecked personnel, evaluation and development

of anti-exposure suits to prolong survival in cold water; development of chemicals for the sterilization of individual canteen water supply; effect of cool quarters on efficiency and performance of naval personnel working in hot spaces; effects on personnel of various concentrations of carbon dioxide and oxygen under conditions of submarine operations; the possible hazards connected with use of silicone insulations in submarine operations; seasickness and means of prevention; studies of the cause and prevention of immersion foot; improvement of life jackets and stretchers for use aboard ship and in air-sea rescue; effectiveness and practicability of body armor in preventing injuries from bullets and other missiles; prevention and treatment of oxygen poisoning in divers; the formation and appearance of gas bubbles in "bends" and means of preventing "bends"; use of penicillin in the treatment of peritonitis on small ships and isolated naval units; uses of tantalum wire for nerve suture; development of a salt tablet which does not cause nausea and vomiting, to be used in the prevention of heat cramps; nutrition surveys by means of a Mobile Nutrition Unit at Naval Training Stations and aboard ship; evaluation and development of insect repellents and insecticides; development of an improved automatic photofluorographic camera for mass chest surveys for tuberculosis; studies of injuries from atom bomb explosions and means of treatment and prevention; the use of radioactive isotopes in medicine; the development of vaccine for prevention of scrub typhus; the development of a procedure for the immunization of personnel against diarrheal diseases due to bacillary dysenteries; the effectiveness of shipboard evaporators operating in polluted harbors; the prevention of crash injury in aviation; and the use of telemetering devices for recording physiological responses in aircraft.

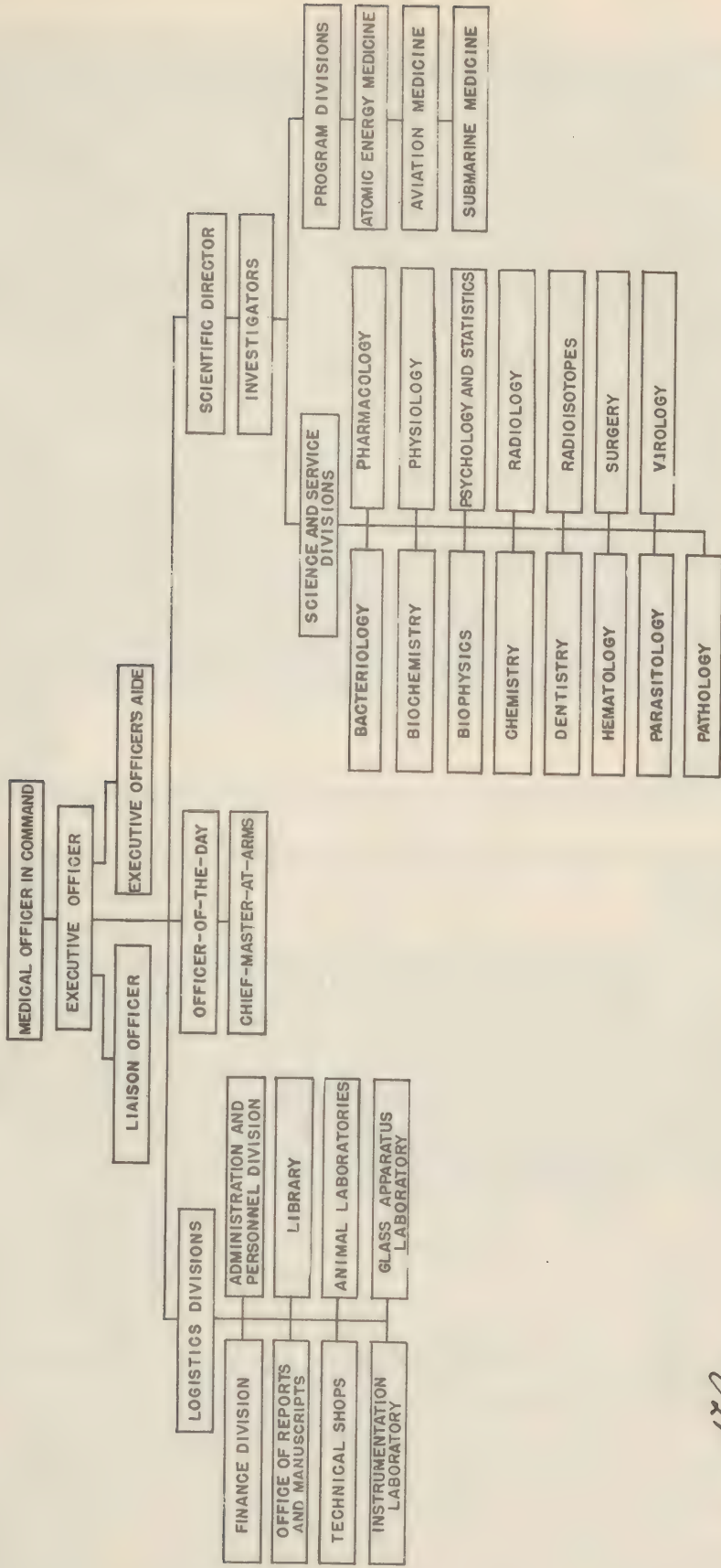
The Commanding Officers of the Naval Medical Research Institute have been:

Captain William L. Mann, MC, USN
10-27-42 to 7-19-43

Captain E. G. Hakansson, MC, USN
7-19-43 to 4-5-48

Captain C. F. Behrens, MC, USN
4-5-48 to

ORGANIZATION CHART
NAVAL MEDICAL RESEARCH INSTITUTE



C.F. Behrens
C.F. BEHRENS
CAPTAIN, MC, U.S. NAVY
MEDICAL OFFICER IN COMMAND

PERSONNEL

CIVILIAN

Investigators or associates

P-9	1
P-8	2
P-7	2
P-6	3
P-5	2
P-4	5
P-3	12

Technicians

P-2	8
P-1	2
SP-8	0
SP-7	1
SP-6	4
SP-5	2
SP-3	1

Administrative

CAF-8	1
CAF-7	1
CAF-6	2
CAF-5	0
CAF-4	8
CAF-3	4
CAF-2	1

NAVAL

Investigators or associates

Medical Corps Officers	8
Dental Corps Officers	3
Medical Service Corps Officers	16
Other Officers	3

Technicians

Enlisted personnel	97
--------------------	----

Administrative

Medical Corps Officers	3
Medical Service Corps Officers	2
Other Officers	1
Enlisted Personnel	7

Service - Civilian

Model makers and carpenters	6	Electricians and helpers	4
Air conditioning and refrigeration	7	Plumbers	2
Janitors	7	Pipefitters	1
General helpers and laborers	3	Animal keepers	15
Machinists	6	Laboratory helpers	15

PERSONNEL GRAND TOTAL (Civilian and Naval) 268



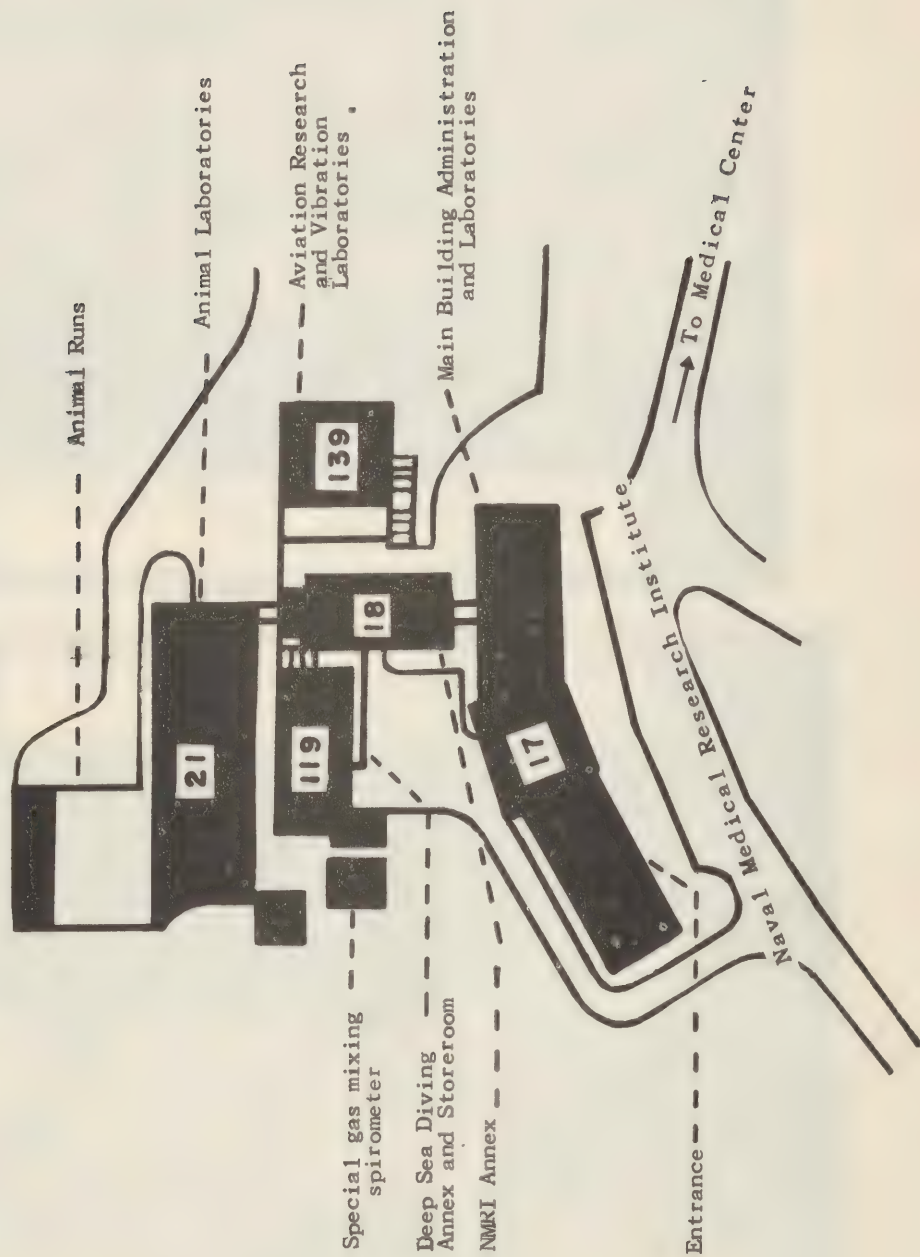
NATIONAL NAVAL MEDICAL CENTER
AIR VIEW

FAIRCHILD PHOTO SURVEYS INC. N.Y.



NAVAL MEDICAL RESEARCH INSTITUTE
AIR VIEW

NAVAL MEDICAL RESEARCH INSTITUTE GROUND PLAN



PHYSICAL PLANT

BUILDING

FLOOR SPACE

BOOK VALUE

17	33 907 sq. ft.	\$1,002,559.00
18	6 960 " "	312,165.00
21	31 687 " "	582,618.00
119	10 700 " "	254,600.00
139	4 500 " "	10,940.00

NAVAL MEDICAL RESEARCH INSTITUTE
(Building 17 - foreground)





AVIATION RESEARCH and
VIBRATION LABORATORIES
(Building 139)



ANIMAL LABORATORIES
(Building 21)



NMRI ANNEX
(Building 18)



DEEP SEA DIVING ANNEX
and STOREROOM
(Building 119)

SPECIAL ITEMS OF EQUIPMENT IN THE VARIOUS DIVISIONS

AVIATION

Low pressure chill chamber to simulate altitudes up to 70,000 feet;
Deceleration tower
Telemetering equipment with frequency modulation transmitters and
testing devices
Standard Navy Link Trainer and electronic performance scoring device

BACTERIOLOGY

Tissue and bacteria grinders
Lyophilizing apparatus
Spectrometer
pH meter
Analytical and torsion balances
Vacuum and pressure pumps
Microscopes (research binocular, ordinary, wide field, phase)
Centrifuges
Constant agitation apparatus

BIOPHYSICS

Vibration machine for producing exposures of 2-50 cps;
Ultrasound high intensity generator and measuring devices
Electron microscopes
High vacuum metal evaporators
High speed microtome

CHEMISTRY

Polarograph
X-ray diffraction apparatus
Electrophoresis equipment
Ultracentrifuge
Mass. infra-red, and emission spectrographs

DENTAL

Hardness tester
Microtomes
Oral photographic apparatus
Microscopes (dissecting scope, research scope, Bausch and Lomb with
micrometer ocular, Spencer binocular)
Grinding and polishing lathes
Incubator
Autotechnicon
Macrophotographic apparatus

EXPERIMENTAL SURGERY

Operating room (fully equipped)

HEMATOLOGY

Microscopes (dark field, phase, ordinary, stereoscopic)

Photographic equipment

Inbred mouse colony - L & A strains

Beckman Quartz Spectrophotometer with ultraviolet light attachment

PARASITOLOGY

Aviaries (pigeons, canaries, chickens)

Insectaries (mosquitoes)

Aquarium (snails)

Microscopes (dark field, phase, ordinary, stereoscopic)

Centrifuges

Microtomes

PATHOLOGY

Microscopes (binocular)

Autotechnicon

Microtomes (paraffin, celloidin and freezing)

Freezing-drying tissue processor

Autopsy room (fully equipped)

Photomicrographic equipment

Photographic dark room

PHARMACOLOGY AND TOXICOLOGY

Microscopes (Leitz and ordinary)

Spectrophotometer

Flame photometer

Continuous extraction apparatus

Kymographs

PHYSIOLOGY

Psychrometric rooms

Gasometric apparatus

Polarograph

Microrespirometers

Beckman Quartz Spectrophotometer with ultraviolet attachment

Precision water bath

Tissot spirometer

Treadmill

PHYSIOLOGY (continued)

- Strain gauge manometers
- Galvanometers
- Slit cameras and other photographic equipment
- Micromanometer
- Van Slyke blood apparatus
- Haldane apparatus
- Iodine pentoxide apparatus

PSYCHOLOGY AND STATISTICS

- Motion picture animal observation cage
- Cage equipment for electrical recording of rat activity
- Electroencephalograph
- Timing and recording systems
- Auditory apparatus
- Stimulus randomizer

RADIATION TECHNOLOGY

- 200 KV X ray unit
- 200 MA radiographic unit
- I. D. L. scalers and counter tubes
- Radioisotope hood
- Vibrating reed electrometers
- Cambridge precision ionization instruments
- Tracerlab autoscaler and G. M. tube

Available for use

- 10 Mev Betatron - Naval Ordnance Laboratory
- 2 Mev Industrial X ray unit - Naval Ordnance Laboratory
- 1 Mev Industrial X ray unit - Naval Gun Factory

SUBMARINE AND DIVING MEDICINE

- Pressure diving tank capable of simulating depths as great as 700 feet
- Open diving tank
- Divers' equipment
- Gas mixing chamber
- Recompression chambers

VIROLOGY

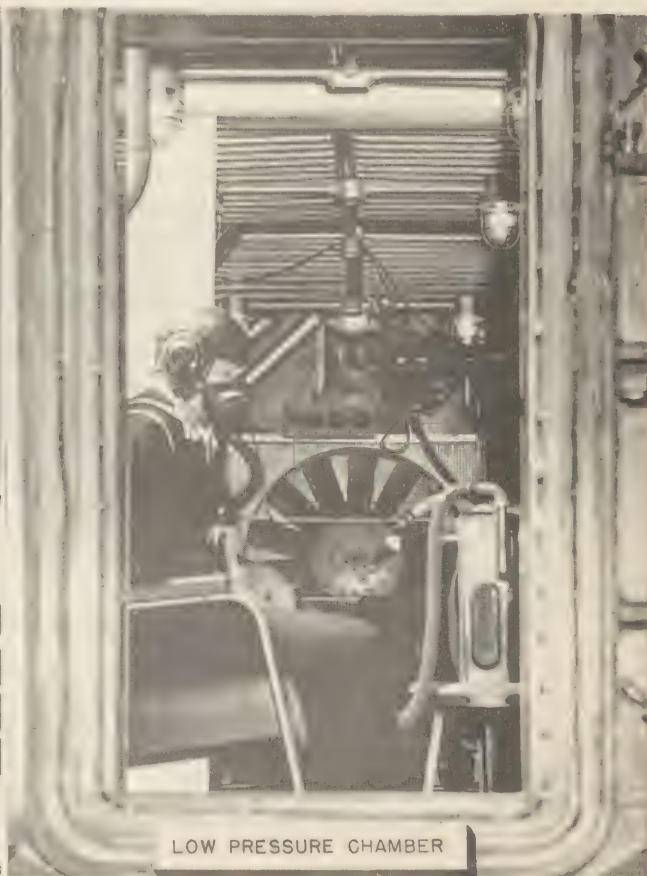
- High speed refrigerated centrifuge
- Lyophilizing apparatus
- Dry ice storage
- Chick embryo propagation
- Insect rearing
- Microscopes (binocular research, dissecting)



NAVY LINK TRAINER



DROP TEST TOWER



LOW PRESSURE CHAMBER



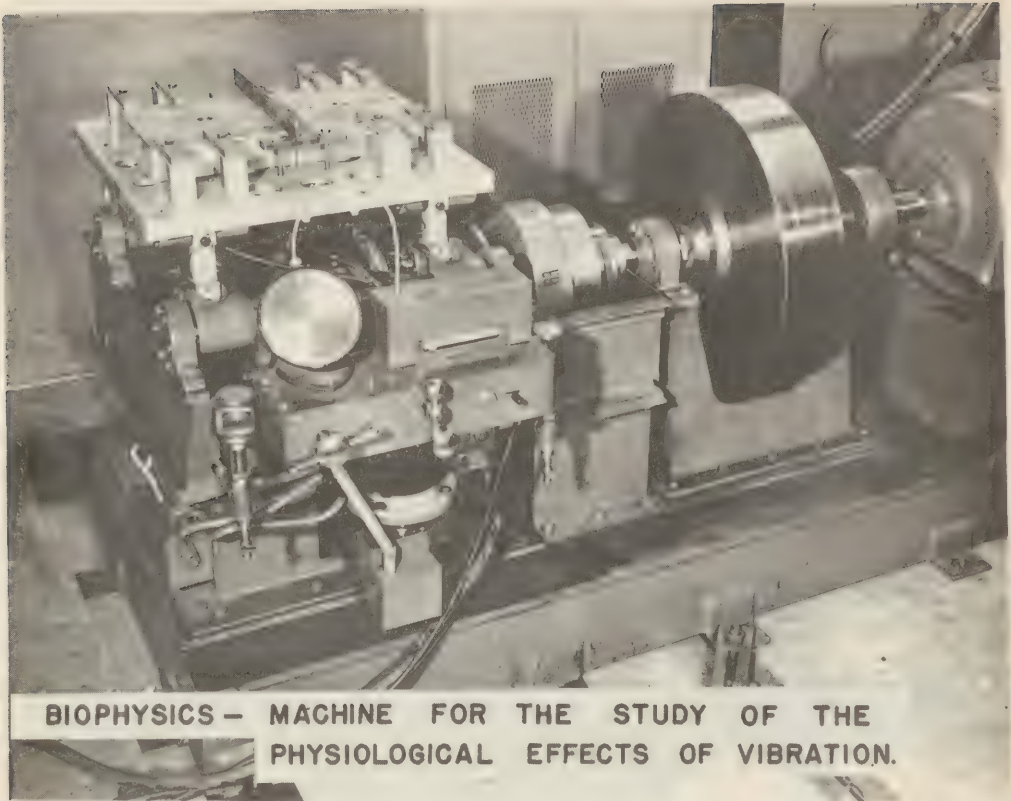
BACTERIOLOGY—OBSERVATIONS ON THE EFFECT OF ESTROGENIC HORMONES ON THE PATHOGENICITY OF MICROORGANISMS FOR LABORATORY ANIMALS.



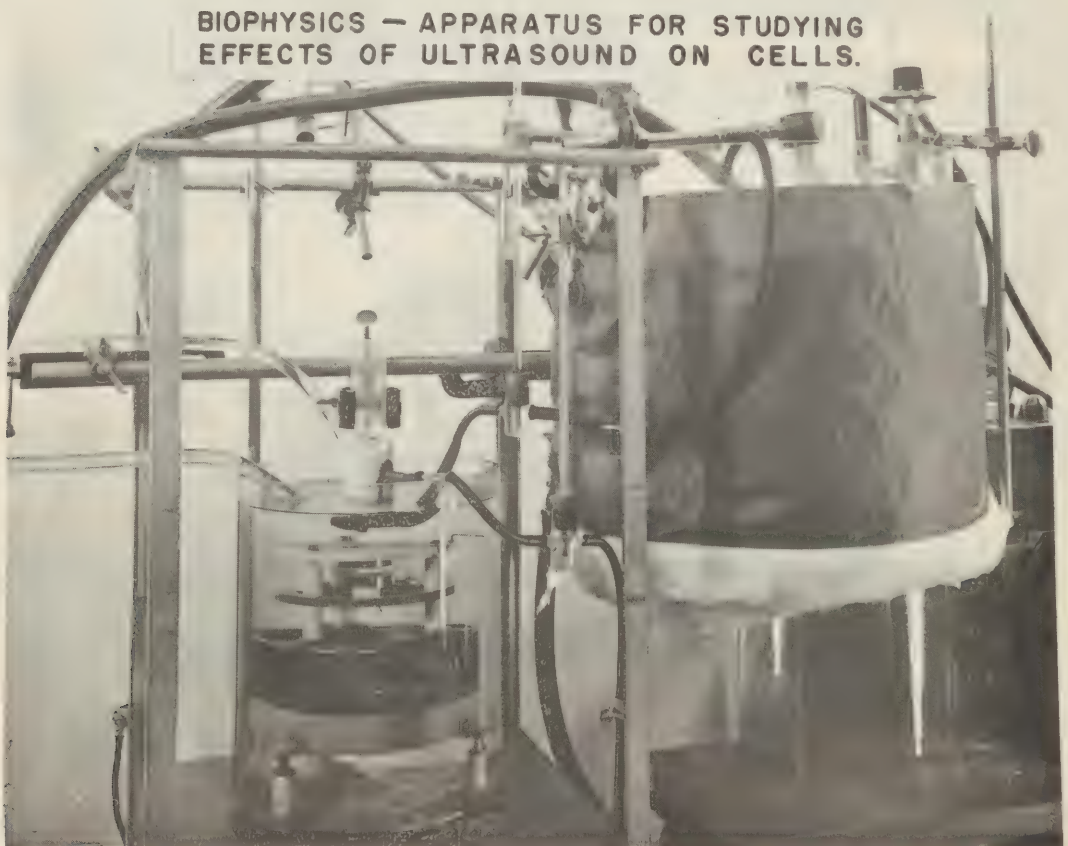
BACTERIOLOGY—PREPARATION OF CULTURE MEDIUMS FOR THE GROWTH OF BACTERIA.



BACTERIOLOGY—CULTURAL AND SEROLOGICAL IDENTIFICATION OF DYSENTERY BACILLI.



**BIOPHYSICS — MACHINE FOR THE STUDY OF THE
PHYSIOLOGICAL EFFECTS OF VIBRATION.**



**BIOPHYSICS — APPARATUS FOR STUDYING
EFFECTS OF ULTRASOUND ON CELLS.**



HIGH SPEED MICROTOME FOR THIN SECTIONING OF
TISSUE FOR ELECTRON MICROSCOPY.



RCA MODEL EMB ELECTRON MICROSCOPE ADAPTED
FOR DIRECT MICROSCOPY OF FROZEN SPECIMENS.



VACUUM EVAPORATOR ADAPTED FOR THE REPLICATION OF WET SPECIMENS FROZEN AT LIQUID NITROGEN TEMPERATURE.



GAS ANALYSIS—ANALYSIS BY MASS SPECTROMETRY



STUDY OF ORAL LESIONS PRODUCED BY
IONIZING RADIATION



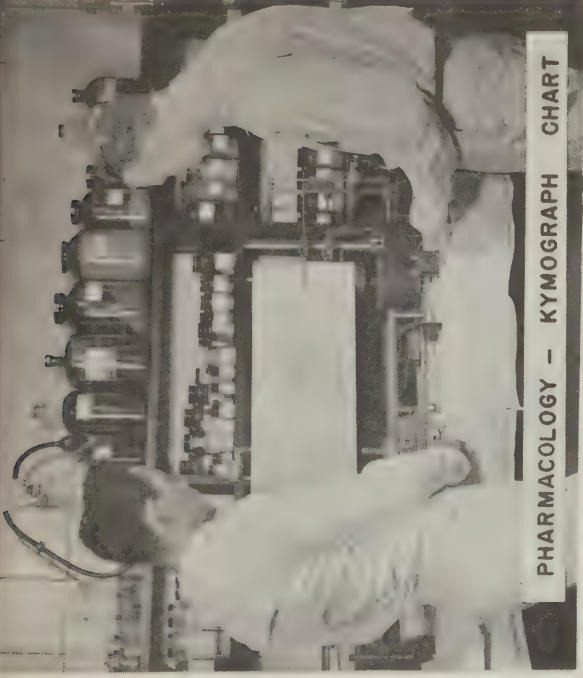
DENTAL CARIES STUDIES IN SUSCEPTABLE STRAIN OF RODENTS



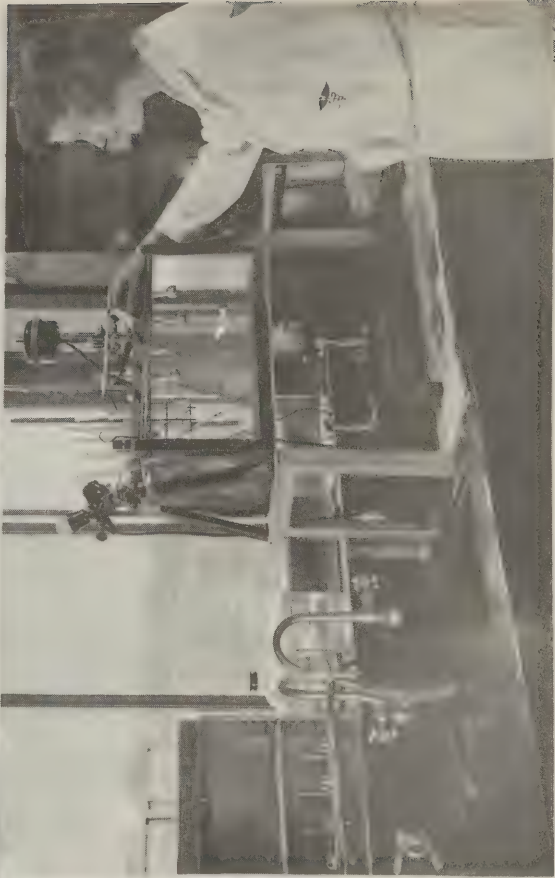
PARASITOLOGY—LABORATORY FOR PREPARATION AND HISTOLOGICAL STUDY OF PARASITOLOGICAL MATERIAL.



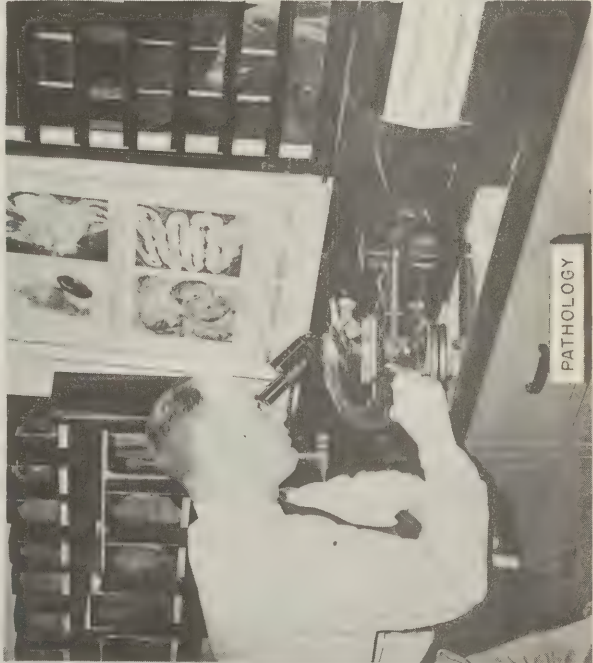
PHARMACOLOGY — KYMOGRAPH CHART



HEMATOLOGY — PERFORMANCE OF COAGULATION STUDIES ON BLOOD AND PLASMA OF IRRADIATED ANIMALS.



PATHOLOGY

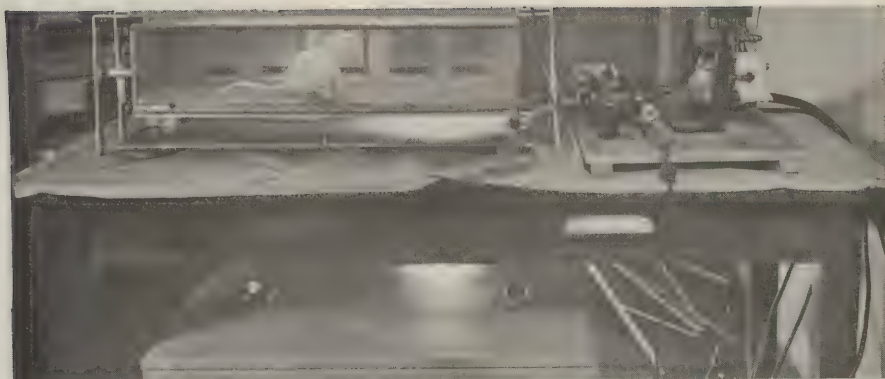




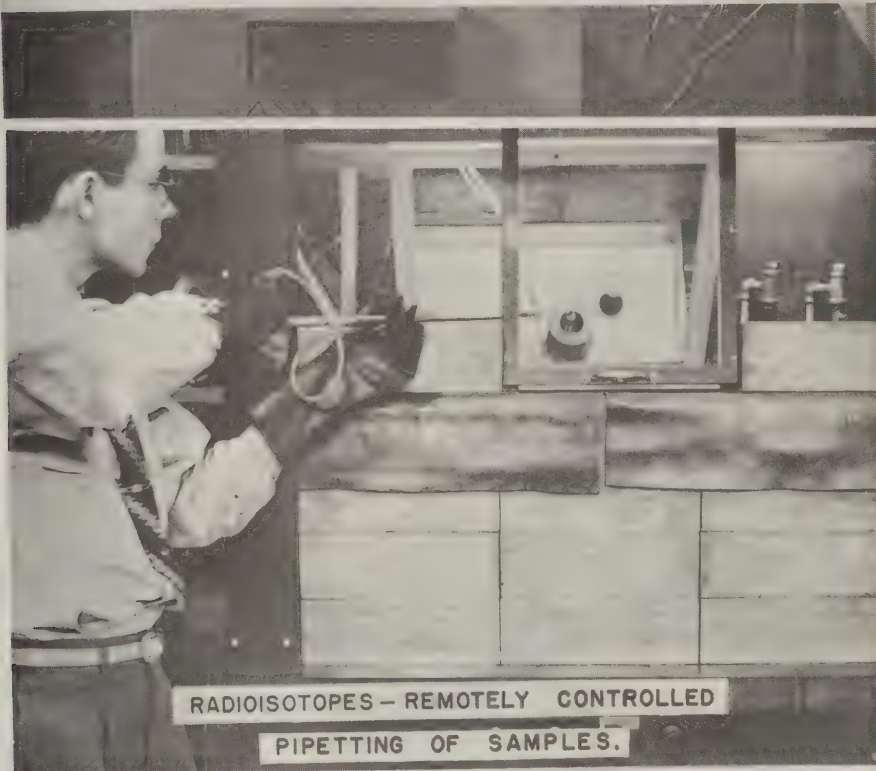
PHYSIOLOGY - A RECORDING FLUORESCENT PHOTOMETER
FOR MEASURING CEREBRAL CIRCULATION TIME
WITH FLUORESCIN AS INDICATOR.



RADIOLOGY - 200 KV X-RAY GENERATOR



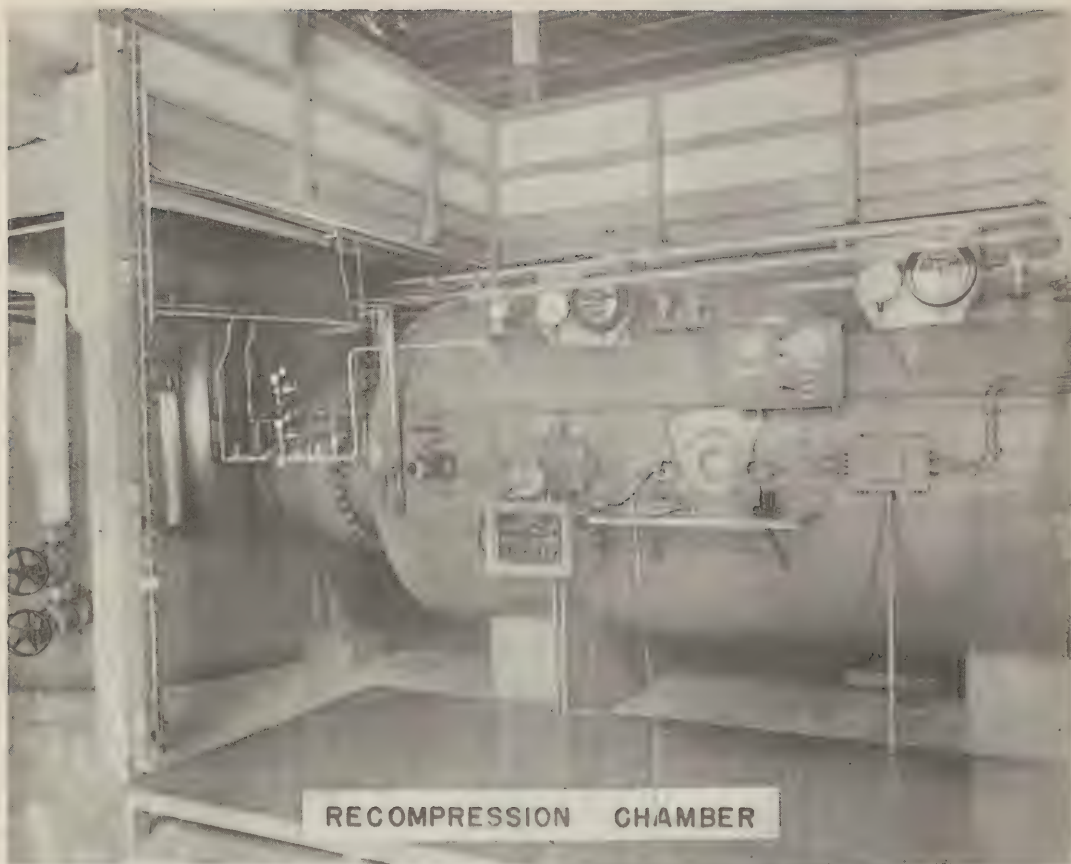
PSYCHOLOGY AND STATISTICS - A LIGHT AVERSION CAGE TO STUDY
BEHAVIORAL EFFECTS OF CHEMICAL MEDIATORS.



RADIOISOTOPES - REMOTELY CONTROLLED
PIPETTING OF SAMPLES.



VIROLOGY - EGG TESTING LABORATORY



RECOMPRESSION CHAMBER



ANIMAL EXPERIMENTAL CHAMBER



CONSTRUCTION SPECIAL RESEARCH TESTING EQUIPMENT

ROOM #1



CONSTRUCTION SPECIAL RESEARCH TESTING EQUIPMENT

ROOM #2



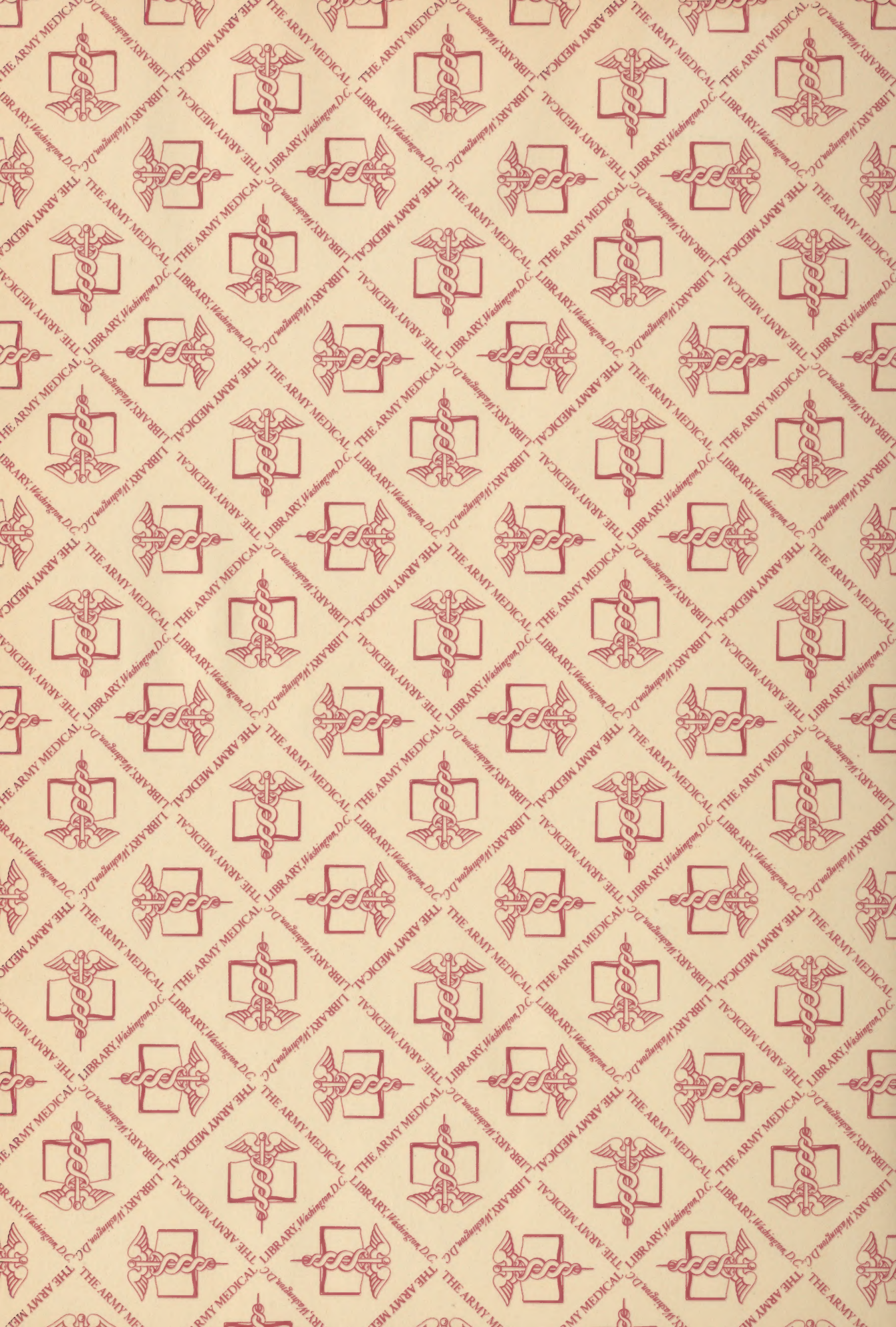
MACHINE SHOP

SHEET METAL WORK

CONSTRUCTION EXPERIMENTAL ANIMAL CAGES



GLASS BLOWING



**SPEEDY
BINDER**



Manufactured by
GAYLORD BROS. Inc.
Syracuse, N. Y.
Stockton, Calif.

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